"Surfeiting, the appetite may sicken": entrepreneurship and the happiness of nations

Working Paper Series

#2012-013

"Surfeiting, the appetite may sicken": Entrepreneurship and the happiness of nations

Wim Naudé, José Ernesto Amorós and Oscar Cristi

Maastricht Economic and social Research institute on Innovation and Technology (UNU-MERIT)
email: info@merit.unu.edu | website: http://www.merit.unu.edu

Maastricht Graduate School of Governance (MGSoG)
email: info-governance@maastrichtuniversity.nl | website: http://mgsog.merit.unu.edu

Keizer Karelplein 19, 6211 TC Maastricht, The Netherlands
Tel: (31) (43) 388 4400, Fax: (31) (43) 388 4499

UNU-MERIT Working Papers

ISSN 1871-9872

Maastricht Economic and social Research Institute on Innovation and Technology, UNU-MERIT

Maastricht Graduate School of Governance MGSoG

UNU-MERIT Working Papers intend to disseminate preliminary results of research carried out at UNU-MERIT and MGSoG to stimulate discussion on the issues raised.

"Surfeiting, the Appetite May Sicken": Entrepreneurship and the Happiness of Nations[†]

Wim Naudé*
José Ernesto Amorós**
and
Oscar Cristi***

Revised Version 6 February 2012

UNU-MERIT, Maastricht Graduate School of Governance, University of Maastricht, and Maastricht School of Management, Maastricht, The Netherlands, email: wim.naude@maastrichtuniversity.nl

** School of Business and Economics, Universidad del Desarrollo, Santiago, Chile. email: eamoros@udd.cl

*** School of Business and Economics, Universidad del Desarrollo, Santiago, Chile, email: ocristi@udd.cl

[†] An earlier version of this paper was presented at the 4th Global Entrepreneurship Research Conference on 2 October 2010 at Imperial College London. We are grateful to the participants for their useful comments and for the suggestions of an anonymous referee. The usual disclaimer applies. We have also updated the paper from an earlier working paper version of 2011.

"Surfeiting, the Appetite May Sicken": Entrepreneurship and the Happiness of Nations

Abstract.

We know that entrepreneurs – at least those driven by opportunities – can contribute to economic growth, productivity improvements and competitiveness in national economies. But do they contribute to happiness on the country level? In other words, does the happiness of nations depend on its entrepreneurs? And what about happy nations – are they better places for entrepreneurs to start-up new businesses? In this paper we survey the literature on entrepreneurship and happiness, and use various data sources, including from the Global Entrepreneurship Monitor, to find tentative evidence of an inverse U-shape relationship between (opportunity) entrepreneurship and national happiness. We find little evidence that a nation's happiness drives early-stage entrepreneurial activity but we do find evidence that opportunity-motivated entrepreneurs in happier nations may be less concerned with high firm growth. Thus we conclude that opportunity-motivated entrepreneurship may contribute to a nation's happiness, but only up to a point. Not everybody should become entrepreneurs, and the happiness of a nation cannot be indefinitely increased by boosting the numbers of opportunity entrepreneurs.

Key words: Happiness, entrepreneurship, self-employment, life and job satisfaction, development, subjective wellbeing, Global Entrepreneurship Monitor.

JEL classification: I31, M13, O50

1. Introduction

Material welfare –as measured in GDP– is but one dimension of a country's development. Promotion of subjective well-being, that is to say how people themselves are satisfied with their lives and their jobs, is increasingly seen as an essential objective of policy. Indicators of "gross national happiness"[1] are being called on to augment traditional measures of development such as GDP per capita (Angner, 2010). The *Commission on the Measurement of Economic Performance and Social Progress* recommended[2] that "the time is ripe for our measurement system to shift emphasis from measuring economic production to measuring people's well-being' (Stiglitz et al., 2009). Advances in the measurement of subjective well-being (or "happiness") that allows happiness to be compared across countries has made such an approach more feasible (Bolle et al., 2009; Bolle and Kemp, 2008; Blanchflower and Oswald, 2007).

Not surprisingly there is a burgeoning literature that attempts to identify what it is that makes countries overall happy - adding to the already substantial literature on what makes individuals happy. Surprisingly, this literature has so far omitted to consider whether and how entrepreneurship may matter

[1]After the Kingdom of Bhutan, who introduced the concept of gross national happiness as its overarching development goal (see http://www.grossnationalhappiness.com/)

[2]This Commission, appointed by President Nicholas Sarkozy of France is available at: http://www.stiglitz-sen-fitoussi.fr/en/index.htm

for happiness on the country level. We know that entrepreneurs – at least those driven by opportunities – can contribute to economic growth, productivity improvements and competitiveness in national economies[3] (Naudé, 2010; 2011; van Stel et al., 2005; Wong et al., 2005). But do they contribute to happiness on the country level? In other words, does the happiness of nations depend on its entrepreneurs?

There are many reasons to suppose, *ex ante*, that entrepreneurs can contribute significantly to national happiness – hence the surprise that the current "economics of happiness" literature is still silent on the matter. For instance, entrepreneurs create jobs and provide the goods consumed by households, including innovative products that contribute to health and experiential activities (Csíkszentmihályi, 2003). Suggestive evidence comes from comparing countries' position on the Global Entrepreneurship Development Index (GEDI – see Ács and Szerb, 2011) with their happiness scores as contained in the Gallup 2005 World Poll. This is done in Figure 1.

--Figure 1 about here—

Figure 1 intriguingly suggests that there *may* be a very strong relationship between entrepreneurship and happiness. Indeed the relationship appears to be non-linear, with countries having a higher score on the GEDI seemingly having an increasing level of happiness. If this is indeed the case it would be a very remarkable result, given that most determinants of happiness on a country level, most notably income per capita, show declining marginal benefits[4]. Without out-of-hand discounting this possibility, there are however two reasons to be cautious to accept this inference.

The first is that with happiness scores tending to be quite stable over time, it may be the case here that the causality runs from happiness to entrepreneurship. It is not implausible to think that happy societies may also be very entrepreneurial societies: we know that happiness leads to more successful outcomes over various domains such as marriage, income, work performance and health, due to the positive affect associated with happiness (Lyubomirsky et al., 2005). Oswald et al. (2009) determines from a controlled experiment that happiness can raise productivity by up to 12 per cent and Amabile et al. (2005) that happiness can improve creativity.

The second reason to be cautious about interpreting Figure 1 as implying that entrepreneurship leads to greater happiness amongst nations is that the GEDI strictly speaking does not measure entrepreneurship, but rather the "entrepreneurial economy". An entrepreneurial economy is one where policy is not aimed at entrepreneurship *per se*, but at the broader conditions which allows for the flourishing of entrepreneurship. The GEDI consists of three sub-indexes to capture these conditions – for entrepreneurial attitudes, actions, and aspirations. They capture measures of how free and conducive a society is towards entrepreneurship, how innovative and creative the milieu is, what support, such as finance and capable human capital, is available, and the like. These factors may not just be associated

[3] Nyström (2008) concludes from a survey of 38 studies into the relationship between entrepreneurship and economic production that there is generally, at least over the long-run, a positive relationship between entrepreneurship and economic production.

[4] A rigorous result in the economics of happiness literature is that rising per capita incomes contributes positively to individuals and countries' happiness, but after a certain level, found by some to be around US $ 15,000 (Frey and Stutzer, 2005) extra income seems to add very little to overall happiness (Easterlin, 1995; Layard et al., 2008).

with entrepreneurship more narrowly defined as the utilization of opportunities through the creation, management and growth of a business firm, but also more broadly with happiness. Existing cross-national studies on happiness have found that countries tend to be happier if there is less unemployment and inflation (Clark and Oswald, 1994; Clark, 2010); better overall health, less inequality (Bolle et al., 2009) and participation and process freedoms, such as living in a democracy and having a say in political matters (Frey and Stutzer, 2005; Hayo and Siefert, 2003; Konow and Earley, 2008; Lelkes, 2002).

Related to the latter caution to be cautious in accepting a straightforward causal relationship between entrepreneurship and national level happiness is that both could be determined by an omitted third factor – such as institutions (the GEDI strongly captures institutional quality)[5]. In the empirical analyses that follow in section 4 we will attempt to control for this.

Hence to say something about the relationship between entrepreneurship and the happiness of nations we need to focus on entrepreneurship – business ownership and start-up rates – directly, control for and disentangle the effects of good institutions on happiness, and investigate the likely bi-directional causality between entrepreneurship and happiness.

This brings us to the purpose of the present paper, which is a first and exploratory attempt to identify the separate effect of entrepreneurship on national happiness levels, and to evaluate the impact of a happy environment on entrepreneurship in turn. We do this by first clarifying some key concepts in section 2 and dissecting the extant literature on the relationship between entrepreneurship and happiness in section 3. Then, in section 4 we set forth our hypotheses, explain our methodology. Our results are discussed in section 5. Section 6 concludes.

2. Concepts and Definitions

An entrepreneur can be defined as a person who is a self-employed business owner (e.g. Van der Loos et al., 2010). The entrepreneur's "job" is to conceptualize, start-up, own and manage a business firm with the aim of utilizing some perceived opportunity[6] (Gries and Naudé, 2011).

For purposes of this paper we consider happiness to be synonymous with subjective wellbeing (SWB) and defines happiness as "the degree to which an individual judges the overall quality of his or her life as favorable" (Blanchflower and Oswald, 2004: 1360). Strictly speaking however, SWB encompass both short-term affects (emotions) as well as a more overall cognitive assessment of one's life, i.e. life satisfaction (Howell and Howell, 2008). We will use data on *life satisfaction* scores across countries as our measure of happiness. This measure has been subjected to empirical testing and validation and is widely considered to be a reliable measure of personal utility.

Life satisfaction can be measured using both single-item and multiple-item measures[7]. Single-item measures consists of asking people some of the following questions[8]:

[5] We are grateful to an anonymous referee for pointing this out to us.

[6] These elements are common to most definitions of entrepreneurship used in economics (e.g. Shane and Venkataraman, 2000; Casson, 1982).

"All things considered, how satisfied are you with your life as a whole these days?"

"Now taking everything about your life into account, how satisfied or dissatisfied are you with your life today?"

Generally, respondents have to give an answer between 1 (for dissatisfied) and 10 (for satisfied).

Major surveys reporting on life satisfaction from various countries include the World Database on Happiness, the Gallup World Poll, the Eurobarometer Surveys, the German Socio-Economic Panel, and others. These surveys tend to be rather consistent in their findings and have made comparison of life satisfaction across time and across countries possible (Sacks et al., 2010). In this paper we will be drawing largely on happiness data from the World Database on Happiness and the Gallup World Poll as these cover the countries for which we have data on entrepreneurship from the Global Entrepreneurship Monitor (GEM). There is quite a variation of happiness across individuals and countries. As we are primarily interested in the latter we can mention that in the GEM sample (which by 2009 covered 65 countries) happiness scores ranged from around 4.3 for Angola to 8.4 for Denmark. Table A1 in the Appendix contains happiness scores for the GEM sample taken from the World Gallup Poll (2005) and the World Database on Happiness (2000-2008 average scores).

3. Literature Review

3.1. The Broader Happiness Literature

Happiness (or subjective well-being) refer to people's feelings, whether positive or negative – people who are happy "feel good" (Layard, 2003). What makes people happy? Over the past three decades a growing body of research has attempted to identify the drivers of subjective well-being and to make recommendations for both how individuals should live their lives (and increase their happiness) (e.g. as in Seligman, 2002) and for public policy (as for instance in Stiglitz et al., 2009). It has found that the drivers of happiness are to be found on the personal (genetic) level, on the level of society and environment, and on the level of the choices that people make in their daily lives (Layard, 2003).

Most of this research has been conducted in psychology and sociology (e.g. Diener, 1984; Diener, 2006; Diener et al., 2010; Kahneman et al. 1999; Seligman, 2002). It has contributed in particular to establishing the concept, measurement and comparison of subjective well-being levels across time and across individuals and countries, in establishing that there are many different causes of happiness (or along a continuum unhappiness); and that happiness can be affected in a transient and more lasting manner by the various drivers. Moreover many of the drivers can be influenced by policy and individual choices, so that happiness may be improved (Layard, 2003; Seligman, 2002). A full discussion of this literature falls outside the scope of the present paper – useful recent surveys are contained in Diener and Biswas-Diener Huppert et al. (2005) and (2008), Layard (2011).

---

[7] See Diener et al. (2010).

[8] As Di Tella and MacCulloch (2008) point out, the term 'life satisfaction' is used in these surveys instead of 'happiness ' as the latter cannot always be translated precisely in all languages.

Economics have in more recently times, and based on earlier contributions from Easterlin (1974), made important contributions to the happiness literature in terms of studying whether and how economic factors, and in particular economic growth, determine happiness (see e.g. Frey and Stutzer, 2002; Stutzer and Frey, 2010; Sacks et al., 2010). It has establishes that after fifty years of material progress in the West, happiness levels have not significantly increased – that there is a point of income after which increases do not necessarily translate into more happiness (Layard, 2011; Stutzer and Frey, 2010). It has also established that how one's income is obtained may matter – job satisfaction is an important component and predictor of happiness (Seligman, 2002). Despite this and despite a growth in cross-country happiness studies the potential contribution of entrepreneurship to happiness has so far, to the best of our knowledge, been omitted. This may be a significant omission given that substantial proportions of people on the planet spend their daily lives as entrepreneurs or in trying to become entrepreneurs; many of the goods and service that we consume or strive to consume are being made available and marketed by entrepreneurs - creative entrepreneurs may be creating our very needs beyond the subsistence level. And entrepreneurs as disproportionately found amongst the super-rich reflecting the fact that entrepreneurship is often incentivized by the desire for material wealth. Finally, if societies are grudgingly realizing that social wellbeing depend on more than GDP and economic growth, should the promotion of entrepreneurship still be as highly regarded as it is today? This paper is an attempt to address this gap and provide some tentative answers.

3.2 Entrepreneurship and Happiness

Why would entrepreneurship, as defined, matter for national happiness?

Entrepreneurs create jobs and provide the goods consumed by households, including innovative products that contribute to health and experiential activities (Csíkszentmihályi, 2003). We know that unemployment is a major and significant cause of unhappiness (Clark and Oswald, 1994; Clark, 2010) - thus by providing jobs entrepreneurs contribute importantly to raising happiness (or at least prevent happiness from declining). We also know that good health, and having experiential activities[9], raises happiness levels (Grinde, 2002; Goetz, Goetz and Robinson, 2007; Bolle et al., 2009). To the extent that entrepreneurs improve productivity and raise economic output, they would also contribute to incomes and wealth that also, up to a point, raise happiness significantly.

Moreover entrepreneurs, by exercising the choice to become entrepreneurial, are in themselves happier if they can do so rather than otherwise. With between 10 and 30 per cent of a country's labor force typically business owners, having a group with higher happiness can significantly raise aggregate happiness scores. Moreover, aggregate happiness can also indirectly be raised through the finding that happiness is interdependent[10] (Bolle et al., 2009): entrepreneurs' happiness can rub -off on the happiness of non-entrepreneurs.

[9] Evidence suggests that 'experiential' purchases, like a holiday trip, make people happier than material purchases (Van Boven, 2005).

[10] Consistent with this is evidence from Stutzer and Frey (2010) showing high unemployment rates in a country depresses the happiness of people who are not they unemployed.

There is a robust body of evidence that entrepreneurs do indeed experience higher levels of job satisfaction than employees[11] (Anderssen, 2008; Benz and Frey, 2008; Blanchflower, 2004; Lange, 2012; Parker and Ajayi-Obe, 2003). The circumstantial evidence is strongly suggesting that they enjoy higher life satisfaction as well. Not only does job satisfaction contribute substantially to life satisfaction (after all, it is the way in which most of our lives are spent) but entrepreneurs have also been found to be healthier, less prone to negative feelings and depression, and to experience flow, than employees (Bradley and Roberts, 2004; Ceja, 2009; Graham et al., 2004; Patzelt and Shepherd, 2011).

But entrepreneurs may also have a negative impact on national happiness. An obvious case would be "destructive" or "non-productive" entrepreneurs (Baumol, 1990) who engage in rent-seeking, corruption, organized and "white-collar" crime and tax evasion. We are however not concerned with these types or allocation of entrepreneurship, as their negative impact on society is unambiguous and uncontroversial. What is more complex and ambiguous, is why and how materially productive entrepreneurship, as defined here, can detract from a nation's overall happiness.

A first possible instance could be when most entrepreneurs are not so by choice, but by necessity (Amorós and Cristi, 2011). The GEM measures "necessity-driven" entrepreneurship by including the question "*Are you involved in this start-up [this firm] to take advantage of a business opportunity or because you have no better choices of work?*" When people turn to entrepreneurship (self-employment) by necessity, they essentially lose their "agency" or free will as far as their employment is concerned, and this is experienced as a loss of subjective well-being (Gries and Naudé, 2011). Many people would indeed be happier as employees in a hierarchical organizational set-up rather than being an independent entrepreneur. Fuchs-Schündeln (2009) for instance points out that not everybody attaches the same utility to the greater freedom, choice and responsibility that entrepreneurs tend to derive from their job and that "Taking decisions independently, immediately feeling the consequences of one's actions, or receiving feedback from a superior might be perceived as positive job attributes by some, and as negative ones by others." (Ibid, p.162).

Consequently not everybody should become entrepreneurs – this is an important implication also for policy makers, who often act as if to maximize the number of entrepreneurs. If more people become entrepreneurs than for whom it results in higher job satisfaction (and thus happiness) then we may infer that overall national happiness may decline. We can find some tentative evidence in support of the notion that with more people becoming entrepreneurs there will be more entrepreneurs in the population who report lower overall job satisfaction from EU data. In Figure 2 we plot the relationship between entrepreneurs' average job satisfaction scores from a sample of EU countries and the extent of entrepreneurship as measured by the business ownership rate.

[11] Job satisfaction is not synonymous with happiness per se, although there is a very strong and positive correlation between people's happiness and job satisfaction (Seligman, 2002). So why are entrepreneurs generally happier than employees on the job? Empirical evidence suggests that this is because they value the independence and lifestyle flexibility of running their own business (Benz and Frey, 2004; Lange 2012; Moskowitz and Vissing-Jorgensen, 2002; Taylor, 1996). Furthermore they experience 'procedural utility', that is the *process* of being an entrepreneur provides enjoyment over and above the material success of being so (Block and Koellinger, 2009; Gries and Naudé, 2011).

--Figure 2 about here—

Figure 2 shows that there appear to be a robust negative relationship between the business ownership rate and entrepreneurs' average job satisfaction across nations – and recall that job satisfaction is significantly correlated with happiness (Seligman, 2002). In countries such as Denmark, where entrepreneurs report high job satisfaction scores in excess of 8 (out of 10), the business ownership rate is relative low: people without the propensity to enjoy the independent style of living of an entrepreneur just do not choose to become entrepreneurs. Elsewhere however, people may not have the same choices, so that a larger proportion of the pool of entrepreneurs is not there by choice. We may expect that their loss of happiness translate on the national level into reduced happiness.

There is also a second way in which materially productive entrepreneurship may detract from national happiness. This may be the case when there is, perhaps paradoxically, too many rather than too few, opportunity-driven entrepreneurs in a country or region. The reason for this may be found in the fact that growing opportunity entrepreneurship may be associated with rising levels of aspirations in a country.

In the "economics of happiness literature" (see e.g. Frey and Stutzer, 2002) but also in psychology (see e.g. Seligman, 2002) it is a recognized phenomenon that with increasing material wealth (or opportunities) people's aspirations increases. To the extent that their actual goals or performance fall short of these, their happiness may decline. At certain levels of opportunity entrepreneurship and accompanying higher income and wealth levels, happiness may stagnate or even decline when entrepreneurs, and their societies", material aspirations start to rise to such an extent that for most people their high aspirations will outstrip their achievements. This will lead to a feeling of dissatisfaction and frustration – they become "frustrated achievers" despite their success (Cooper and Artz, 1995; Stutzer, 2004; Becchetti and Rossetti, 2009; Stutzer and Frey, 2010).

In fact, at high levels of opportunity entrepreneurship it may in fact be persons with high and growing aspiration levels that self-select into entrepreneurship. With many opportunity entrepreneurs around competition will increase- specifically competition to fulfil rising aspirations. In such a socially competitive environment, following Hill and Buss (2008: 64-65), the "negative" emotion of envy (or fear) could be very helpful in motivating and focusing the entrepreneur – making him or her more "competitive" – although this could come at the accompanying price of experiencing negative subjective well-being. As Hill and Buss (2008: 65) put it "individuals who experience envy in response to a social competitors advantage would be appropriately alerted to the advantage and motivated to commence corrective action". More competitive-minded entrepreneurs may therefore experience more negative states of mind that others and report lower levels of happiness. Higher levels of opportunity entrepreneurship may make this more likely. Many negative spill-over effects could result. For instance in highly competitive and materialistic societies with high aspirations we see "family solidarity and community integration" (Lane, 2000) breaking down. Diminishing social and family relationships – relational goods – is a well-recognized cause of reduced happiness across countries and individuals.

Third, entrepreneurs may also lower overall national happiness when successful opportunity entrepreneurship result in greater income and wealth inequalities in a country. Such inequalities are strongly associated in the literature with lowers overall happiness (Bolle et al., 2009). This is referred to

in the literature as "reference-groups effects", because what matters for happiness often is not a person's absolute income or status, but income or status in reference to some comparison group – i.e. "keeping up with the Joneses". If all incomes rise, and one's relative position remains the same, it is not expected to influence one's happiness; however if one's relative position decline, in spite of higher absolute income, one may experience a decline in happiness (Howell and Howell, 2008). An entrepreneur may perceive his or hers status in society to depend on the extent of (even excessive) consumption of "positional" goods, i.e. goods that indicates relative status and whose value depend on being exclusive (Dean, 2007; Sarracino, 2010). With more opportunity entrepreneurs one may observe more income and wealth inequalities and more variability in entrepreneurial performance. Some may be very successful "superstars". As the relatively less successful becomes aware of the formers' greater success they may shift -unrealistically- their happiness reference group to that of the more successful entrepreneurs. "We need only to turn on our televisions or gaze up at a billboard to be exposed to people who are, literally, the richest and most attractive in the world (Hill and Buss, 2008: 68). Graham (2005: 47) posits that as a result of information technologies and globalization "aspirations may be driven by new global reference norms, while opportunities are constrained by local conditions".

Finally, the state of a nation's happiness may have an impact on its entrepreneurship. In the introduction we mentioned that it is not unreasonable to associate happy societies with entrepreneurial societies. Happiness has been found to be a causal factor of success in various domains, including work performance, productivity and creativity, all domains pertinent to entrepreneurship (Amabile et al., 2005; Lyubomirsky et al., 2005; Mohanty, 2009; Oswald et al., 2009). The positive affect associated with happiness may crucially contribute to different ways of thinking – allowing more creativity and optimism (Seligman, 2002) –that are associated with entrepreneurship. This may imply a bi-directional relationship between country or individual level entrepreneurship and national level happiness. However, as far as we are aware there is not much research on whether the overall state of a nation's happiness significantly spurs on entrepreneurship. In the remainder of the paper we will try to contribute towards filling this gap.

4. Methodology

4.1 Recapitulation of the argument

Before describing our methodology we need to recap our key arguments so far. This will hopefully help with the development and substantiation of our hypotheses (stated in Section 2).

In Section 3 we have argued that having more and better entrepreneurs in a country may add to its national happiness through both the functioning of entrepreneurs (because for people who appreciate self-reliance and independence the option for self-actualization makes them happier) and the possibility that entrepreneurs may be happier than employees. The latter possibility was shown to have both theoretical as well as empirical support. However, we have also cautioned, again based on theory and the scant evidence that currently exist, that necessity-motivated entrepreneurship (where entrepreneurship loses its value as a human functioning), rising aspirations and reference group effects, and growing income and wealth inequalities may lead to the apparent paradox that with rising entrepreneurial and economic success a country's overall happiness may decline. In particular therefore, the motivation attached to entrepreneurship may matter for happiness, and the relationship may be non-linear, is reference group effects and inequalities start to occur at rising levels of incomes.

We also argued in Section 3 that there is likely not only to be an influence of entrepreneurship on the happiness of nations, but that it is also likely that the happiness of nations may inspire entrepreneurs. Whether more happy nations will inspire more entrepreneurs, particularly opportunity-driven and high-impact forms of entrepreneurship, was considered to be likely, although as we found directly confirming empirical evidence still seems to be insufficient to allow a final judgment. It is perhaps to be expected that there will be a bi-directional relationship between happiness on the country level and entrepreneurship on the individual level.

4.2 Hypotheses

From the problem statement in Section 1, the literature review in Section 3, and the recapitulation above we can propose the following three hypotheses:

> *Hypothesis 1. An increase in entrepreneurship is associated with an increase in national happiness and this effect is stronger if entrepreneurship is predominantly opportunity driven.*
>
> *Hypothesis 2. The relationship between entrepreneurship and national happiness level is an inverted U-shape: up to a certain level an increase in national happiness level will be associated with an increase in entrepreneurship, after which it would be associated with a declining level of entrepreneurship.*
>
> *Hypothesis 3. Happier countries will have a higher likelihood of having opportunity-driven and high-growth entrepreneurship.*

Hypothesis 1 (H1) follows from our discussion of Figure 2 in the previous section, where it was deduced that entrepreneurs are generally happier (higher job satisfaction) than employees but only if people can make the choice whether or not to become entrepreneurs.

Hypothesis 2 (H2) follows from the conclusion in the previous section that there are both reasons to suspect opportunity entrepreneurship to contribute to happiness and to detract from happiness, and that the detraction effects, which comes through rising aspirations and inequalities (reference effects), may only apply at high levels of opportunity entrepreneurship. Thus, we basically expect the relationship between opportunity entrepreneurship and happiness to be initially positive, with a decreasing marginal happiness from opportunity entrepreneurship, to the extent that after a certain level happiness may even start to decline. See also the discussion section 4.1.

Hypothesis 3 (H3) follows from the plausible conclusion in section 2 that happier countries may be associated with the free, creative and encouraging environment for entrepreneurial flourishing. In particular, as we stated in section 2, happiness has been found to be a causal factor of success in various domains, including work performance, productivity and creativity, all domains pertinent to entrepreneurship (Amabile et al., 2005; Lyubomirsky et al., 2005; Mohanty, 2009; Oswald et al., 2009). We hypothesize that it would in particular be opportunity-driven and high-growth expectations types of entrepreneurs that will be associated with a happier national environment, in particular because happiness and high-growth expectations may share the common trait of optimism. The positive affect and optimism associated with happiness may crucially contribute to different ways of thinking – allowing the greater

creativity and risk-taking (Seligman, 2002)– that are associated with opportunity and high-growth expectations entrepreneurship.

4.3 Estimating Equations

To test our hypotheses we will run a number of regression equations. Hypotheses H1 and H2 will be tested estimating the following standard type of "happiness equation" (see for instance Di Tella and MacCulloch, 2008; Blanchflower and Oswald, 2004; Rehdanz and Maddison, 2003; Sarracino, 2010) with measures of entrepreneurship included on the right hand side:

$$H_{it} = \alpha + \beta' \boldsymbol{E_{it}} + \delta' \boldsymbol{C_{it}} + u_{it} \qquad (1)$$

Where H_{it} is our measure of happiness (life satisfaction) for country i at time t. E_{it} is our measures of entrepreneurship in country i at time t, and $\boldsymbol{C_{it}}$ is a vector of control variables. E will enter in quadratic form. We expect $\beta>0$ for E and $\beta<0$ for E^2, to capture the inverted U-shape hypothesized to exist between entrepreneurship and happiness. We will also include a composed variable, which is the result of multiplying total entrepreneurship activity by the ratio between opportunity-based entrepreneurship and necessity based entrepreneurship, that captures the effect of opportunity-based entrepreneurship. We expect a positive sign for the parameter that accompanies the composed variable. The latter is based on our hypothesis that the expected effect of entrepreneurship on happiness is greater (lesser) as higher (lesser) is the relative weight of opportunity entrepreneurship.

We will use simultaneous equation techniques on the estimation of (1) to account for the expected causality-loop between entrepreneurship and happiness. Thus we propose a model composed for two equations, one for each one of these variables[12]. The equation for entrepreneurship assumes that this variable is a function of happiness and a set of control variables.

The unknown parameters of this system of simultaneous equations are estimated using three stage least squares (3SLS). In the first stage each endogenous covariate in the equation of interest is regressed on all of the exogenous variables in the model, including both exogenous covariates in the equation of interest and the excluded instruments. The predicted values from these regressions are obtained. In the second stage, the regression of interest is estimated as usual, except that in this stage each endogenous covariate is replaced with the predicted values from its first stage model. On the third stage, the error terms of the second stage are used to construct the variance-covariance matrix of the residuals allowing for contemporaneous correlation among the error terms of the equations, and use it to perform feasible generalized least squares in each equation. The 3SLS provide more efficient estimators than 2SLS provided the system is over identified. We will use a pooled 3SLS estimator since unfortunately insufficient data does not permit panel data estimation

In H3 we are interested in the impact of a country-level variables (happiness) on an individual decision to (i) enter into entrepreneurship and (ii) be a high-impact entrepreneur. The latter is defined here as an entrepreneur who expects to create at least 20 new jobs within five years. The dependent variables

[12]For the other endogenous variables of the model: E^2, the squared value of happiness and the composed opportunity-based variable, we use a set of equations in which these variables are a function of all the exogenous covariates, the squared values of the exogenous covariates and their cross products.

are therefore discrete variables: in the case of (i) the dependent variable (E)= 1 if a person enters early stage entrepreneurship and = 0 if a person decides not to, as well as = 1 if a person enters early stage entrepreneurship to pursue an opportunity (opportunity-driven entrepreneurship) and 0 if a person decide not to enter entrepreneurship. In the case of (ii) the dependent variable (HIE) = 1 if the entrepreneur is an expected high-growth impact entrepreneur and = 0 if not.

Given that the dependent variables are in both cases discrete variables and that the two cases are not independent, we will use a Double Probit (or biprobit) sample selection estimator to test H3. Use of sample selection estimators such as the Double Probit is advised since there are a large number of adults surveyed in the GEM that did not choose to become entrepreneurs. The cases where they did not choose to enter entrepreneurship in the first place may not be random but due to some particular individual features - so that using an OLS estimator could lead to biased estimates. In essence, high-performance outcomes are observed only for individuals that selected into entrepreneurship. If the factors that determine the choice to be an entrepreneur or not are different from those that determine the impact of entrepreneurship, not taking the selection into account is tantamount to having the model subject to an omitted variable bias (Heckman, 1979).

4.4 Variables and Data

In the cases of hypotheses H1 and H2 our dependent variable is the *life satisfaction scores* of the countries in the GEM sample. As we commented, some of the main global surveys of happiness are the *World Database Happiness* and the *Gallup World Poll*. These however do not report survey results for every year that GEM data is available. For the countries in the GEM we use life satisfaction scores for years 2000 up to 2008 from the *World Database Happiness*. Survey questions to collect those scores change from one country to another and also from one year to another within a same country. These surveys questions are the ones indicated previously in this paper. In spite of those changes we judge that the questions and the scores are comparable. Some countries use two or also three of those questions surveys in a same year. When that is the case we use a simple average of the scores.

For entrepreneurship measures we use GEM´s rates: First the composite index Total Early Stage Entrepreneurial Activity (TEA)**.** TEA is the percentage of 18 to 64 age-groups who are starting a new business or currently are owner-managers of a new business that has paid salaries, wages or any other payments to the owners for more than three months, but not more than 42 months. Second, we use the Opportunity-driven entrepreneurship (OPP) measure. OPP is the percentage of individuals involved in TEA (as defined above) who (i) claim to be driven by opportunity, as opposed to finding no other option for work; and (ii) who indicate the main driver for being involved in this opportunity is being independent or increasing their income. For the case in which we measure E by TEA wee will also include the composed variable *TEAxOPP/NEC*, which is the product between TEA and the ratio between OPP and necessity based entrepreneurship (NEC). NEC is the percentage of individuals involved in TEA (as defined above) who are involved in entrepreneurship because they had no other option for work.

The selection of control variables was influenced by the literature survey contained in Section 2. The controls include life an education indexes at country level, a variable that measures income aspiration, governance quality as measured by Rule of Law, and Gross Domestic Product (GDP) per capita and its squared value. Governance quality is included to account for a possible third effect – as it may influence

both happiness and entrepreneurship independently. GDP per capita in turn intends to capture a curvilinear relationship between life satisfaction and income that is consistent with the theory of diminishing marginal utility of income. Data on control variables were obtained from several sources (see Table 1).

--Table 1 about here—

In the case of H3, we used the individual level data from the GEM survey in 2005, which covers over 117,833 individuals in 35 countries[13]. We chose the 2005 data as it corresponds to the 2005 *Gallup World Poll* life satisfaction score at country level, and hence we could relate entrepreneurship decisions in 2005 to the reported happiness of a country in that year. We also included in the Double Probit regressions a number of control variables. These were selected based on generally recognized determinants of entrepreneurial start-ups, including the entrepreneurs' personal characteristics, industry, and institutional determinants. The data was sourced from the GEM as well as the World Bank (see Table 2).

--Table 2 about here—

Table 3 summarizes the variables and Table 4 shows the correlation matrix of data used for the 3SLS regressions (country-level data).

--Table 3 and 4 about here—

5. Regression Results

5.1. Pooled 3SLS Results

We estimate two models[14]. In model 1 we explore the relationship between life satisfaction and TEA. Model II relates life satisfaction to OPP. Our results for the equation of life satisfaction, in both models, indicate that a country's entrepreneurial activity contributes positively to its life satisfaction score. Moreover, the parameter that accompanies the variable *TEAxOPP/NEC* in model 1 is statically significant and has a positive sign (See Table 5). This implies that a higher the ratio of opportunity to necessity entrepreneurship will be associated with improved life satisfaction. These results support Hypothesis 1.

--Table 5 about here—

Results for both models also indicate that the income and life satisfaction relationship is curvilinear with a decreasing marginal utility at higher levels of income. This is consistent with theory (e.g. Diener et

[13]The countries surveyed were Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, China, Croatia, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Jamaica, Japan, Latvia, Mexico, Netherlands, New Zealand, Norway, Singapore, Slovenia, Spain, South Africa, Sweden, Switzerland, Thailand, Venezuela, United Kingdom, United States.

[14] Rank conditions of the equation systems in each model were verified using the option checkreg3 in Stata (http://fmwww.bc.edu/repec/bocode/c/checkreg3.ado)

al., 1993; Diener and Biswas-Diener, 2002). As expected the income aspiration proxy has a negative effect upon happiness. This implies that a more unequal income distribution reduces national happiness and that that effect is greater at higher levels of GDP per capita. An interesting finding is that the effect of OPP upon life satisfaction is described by an inverted U. We interpret this that people who start a new business are more prompt to be happy, but as nations become happier, their need and imperative for opportunity entrepreneurship seems to decline. Perhaps relational goods, as was discussed in the literature survey, become more important. This finding extends the findings of Lyubomirsky et al (2005) and Oswald et al. (2009) about happiness to the domain of entrepreneurship. The results support Hypothesis 2.

We also like to point out that better governance as measured by rule of law, is negatively associated with total entrepreneurial activity (TEA). This may be due to the fact that at low levels of development and governance formal job security tends to be lower, leading to higher rates of necessity start-ups – and vice versa. Hence better development and governance outcomes may be good for leading to formal job opportunities, and this reduces necessity entrepreneurship. While better governance leads then to an understandable decline in necessity forms of entrepreneurship, our results cannot find evidence that it leads automatically to higher rates of opportunity-driven start-ups – we can find no statistically significant relationship in our sample between governance (measured by rule of law) and opportunity-driven start-ups. Moreover, our results indicate that the relationship between GDP per capita and entrepreneurial activity can be described by a U-curve. This results is consistent with a body of literature that describes that as income per capita increases, entrepreneurial activity will declines until some level of income is reached at which the former will star increasing again due to a rise in opportunity driven entrepreneurship (Carre et al., 2002; Wennekers et al., 2005; Acs and Amorós, 2008; Amorós and Cristi, 2008). This pattern could related with the entrepreneurship rates in countries with relative low levels of per capita income that are characterized by the prevalence of many very small businesses or self-employment. As per capita income increases, industrialization and economies of scale allow larger and established firms to satisfy the increasing demand of growing markets and to increase their relative role in the economy. The increase in the role of large firms may be accompanied by a reduction in the number of new firms or people that are self-employment, as a growing number of people find stable employment in large firms. With high GDP per capita, the role played by the entrepreneurial sector may increase, as more individuals can access the resources to go into new business for themselves in knowledge-intensive environments with more business opportunities (Bosma and Levie, 2010).

5.2 Double Probit Results

Recall from Section 4 that we are interested in the impact of a country-level variables (happiness) on an individual decision to (i) enter into entrepreneurship and (ii) be a high-impact/ optimistic entrepreneur, i.e. an entrepreneur who expects to create at least 20 new jobs within five years. Because the decision at both stags can be coded as a discrete decision a Double Probit estimator is advised. The Double Probit regression results are contained in Table 6. To facilitate model identification, the two stages (outcome and selection) should have at least one variable different. In the present case we achieve this by considering start-up costs, opportunity perception, personal knowledge of another entrepreneur and credit availability as determinants that are more relevant for the selection (starting) stage than for high-growth expectations.

Furthermore, we estimate the Double Probit model using a correction for clustered standard errors. This is due to the fact that we use individual level random variables (drawn from the GEM) together with a higher(country)-level indicator for happiness in the same equation. This could result in clustered standard errors on the higher-level[15]. To avoid this we therefore implemented the estimator using the Huber-White sandwich estimate of variance, adjusted for cluster-correlated data. This was implemented in STATA 11 using the *vce*(cluster) option. A discussion of this adjustment is contained in Rogers (1993).

---Table 6 about here—

The diagnostic results contained in Table 6 indicates that ρ, the correlation coefficient between the various equations' error terms is statistically significant in the case of individuals who start a firm based for opportunity reasons, so that at least in this case the Double Probit model (as against estimating each equation separately using probit) is appropriate.

It can be seen in the Table 6 that the level of happiness in a country generally do not have a statistically significant impact on high-growth entrepreneurship or the decision to enter entrepreneurship for opportunity reasons. Happier countries are not necessarily more entrepreneurial.

The only possible exception is in the case of opportunity-motivated entrepreneurship (column 3 of Table 6). Thus happiness will have a negative impact on the growth expectations of entrepreneurs if they have started up a firm to pursue an opportunity. In other words opportunity-driven early-stage entrepreneurs in happier nations tend to have somewhat reduced expectations of growth. One possible interpretation of this is that in happier nations there may be less need to work (with good social security) and less unemployment, so that growing a firm in terms of employment may be more difficult – the marginal effort is much higher. Another possible explanation is that in happier nations opportunity-entrepreneurs may not as much strive for growth or firm performance, but rather to enjoy the non-monetary benefits of entrepreneurship. This can include lifestyle choices. Thus as nations become happier, their entrepreneurs may also tend to value non-monetary quality of life more, and get more out of entrepreneurship as a human functioning, to use the terminology of the capabilities approach to welfare (see Gries and Naudé, 2011). Thirdly it may also be that in happier nations more women enter into opportunity entrepreneurship – which has been found to hold less high-growth expectations than men (Minniti and Naudé, 2010).

Based on these results we have however to reject hypothesis H3. Opportunity entrepreneurship may make nations happier (section 5.1) but as nations become happier, their need and imperative for high-growth entrepreneurship seems to decline for the possible reasons mentioned in the previous paragraph. Opportunity-motivated entrepreneurs seem less concerned about growing their firms.

Finally, as far as the control variables are concerned, Table 6 shows that these generally have the expected sign and many are significant. Thus education and entrepreneurial abilities and confidence contribute positively to the probability of start-up and growth expectations. Networks, and the cultural views or acceptability of entrepreneurship in a particular nation is positively related to the probability of early-stage entrepreneurial activity. Women are less likely than men to become entrepreneurial or hold

[15] We are grateful to an anonymous referee for pointing this out to us.

high-growth expectations, younger people are more likely to enter entrepreneurship, and fear of failure discourages entrepreneurship.

6. Concluding Remarks

Non-material and subjective measures of human-wellbeing are needed to inform government policies, rather than a narrow focus on GDP per capita. Our conclusion, based on the findings of this paper, is that a better understanding of entrepreneurship and its relationship with non-material and subjective indicators of human wellbeing is important. It has implications for policy as well as for further research.

We started out this paper by noting that the relationship between entrepreneurship and national happiness has been neglected in the literature, despite the fact that a sizeable proportion of any country's population consists of entrepreneurs and that entrepreneurship contribute importantly to creation of jobs, consumer goods and incomes and wealth – all inputs, up to a point, to national happiness. Recently Gries and Naudé (2010 and 2011) provided fresh theoretical models to illustrate that entrepreneurship could matter for individual and societal development, beyond mere increases in GDP per capita.

From a survey of the literature we posited that (i) An increase in entrepreneurship is associated with an increase in national happiness and this effect is more pronounced with a higher prevalence of opportunity driven entrepreneurship (H1); that (ii) The relationship between entrepreneurship and national level happiness is an inverted U-shape: up to a certain level an increase in entrepreneurship will be associated with an increase in national level happiness, after which it would be associated with a declining level of happiness (H2) and (iii) that happier countries will have a higher likelihood of having opportunity-driven and expected high-growth entrepreneurship (H3).

Using as our primary source data on early stage entrepreneurial activity from the various Global Entrepreneurship Monitor (GEM) surveys, we found support for hypotheses *H1* and *H2*.This means that opportunity-driven entrepreneurship may contribute to national level happiness, and that the relationship may follow an inverse U-shape. Our interpretation of the inverse U-shape relationship between opportunity-driven entrepreneurship and national happiness and the negative impact of national happiness on the probability of becoming an opportunity entrepreneur is as follows. While entrepreneurship may make nations happier, the need for (opportunity) entrepreneurship in happier nations seems to decline. Perhaps relational goods, as was discussed in the literature survey, become more important.

Regarding, *H3* we found little evidence that suggest that happiness affect the level of new firm start-ups, thus we rejected *H3*. Nevertheless, we established that opportunity-driven early-stage entrepreneurs in happier nations tend to have somewhat reduced expectations of growth. Thus further to the apparent decline for opportunity entrepreneurship in happier nations, the very nature of opportunity entrepreneurship seems to change in happier nations. We explained this as either being due to either a reduced imperative to be in wage employment in happier nations (these nations tend to have good social security) so that growing a firm in terms of employment may be more difficult; or because entrepreneurs in happier nations do not have the same aspirations for firms growth as those in less happy nations. This

would be consistent with the case that when nations become happier, their entrepreneurs value the non-monetary quality of life more.

We set out in this paper to add to the scant literature on the relationship between national happiness and entrepreneurship. The story that our investigations have uncovered seems to suggest that the motivation for entrepreneurship matter; that opportunity-motivated entrepreneurship could contribute to happier societies. However, the relationship is nonlinear, so that after some level of entrepreneurship the benefits would decline. The nature of opportunity-motivated entrepreneurship also seems to change as societies become happier – towards being less concerned with achieving high growth. In general too much entrepreneurship can indeed be too much of a good thing. It is perhaps the case as Shakespeare (in Twelfth Night) described it in another context: *"If music be the food of love, play on; give me excess of it, that, surfeiting, the appetite may sicken, and so die"*.

While intriguing, supported by the available evidence and consistent with the existing literature, we have to caution that our conclusions are still tentative. Data availability is still a significant obstacle. Our sample was restricted only to 36 countries, generally countries with moderate to high happiness and GDP levels. Another shortcoming is that we do not have happiness data at individual level and have assumed an average "distribution of the happiness" on the individuals included in the GEM sample. A useful extension to the GEM survey in future would be to include questions on life and job satisfaction.

Despite these shortcomings we agree with Layard (2003:3) that "GDP is a hopeless measure of welfare". Hence the rather narrow focus in the entrepreneurship-and-development literature on the relationship between *GDP and entrepreneurship* can explain only a part of the role of entrepreneurship in human development. The results in this paper, even if tentative, suggest that it is time for entrepreneurship scholars to venture beyond GDP. This broadening of the focus may be rewarding from the scientific, societal and policy-making perspectives.

References

Ács, Z. and Amorós, J. E. (2008). Entrepreneurship and competitiveness dynamics in Latin America. *Small Business Economics*, 31(3), 305–322.

Ács, Z. J., and Szerb, L. (2009). The Global Entrepreneurship Index (GEINDEX). *Foundations and Trends in Entrepreneurship*, 5(5), 341–435.

Ács, Z. J., and Szerb, L. (2011). *Global Entrepreneurship and Development Index*. Northampton, MA.: Edward Elgar Publishers.

Amabile, T.M., Barsade, S.G., Mueller, J.S. and Straw, B.M. (2005). Happiness and Economic Performance, *Economic Journal*, 107, 1815–1831.

Amorós, J.E., and Cristi, O. (2008). Longitudinal Analysis of Entrepreneurship and Competitiveness Dynamics in Latin America. *International Entrepreneurship and Management Journal*, 4(4), 381–399.

Amóros, J.E. and Cristi, O. (2011). Poverty, Human Development and Entrepreneurship, In Minniti, M. (Ed.) *The Dynamics of Entrepreneurship: Theory and Evidence*. Oxford: Oxford University Press, pp. 209–230.

Andersson, P. (2008). Happiness and Health: Well–Being among the Self–Employed, *Journal of Socio–Economics*, 37, 213–236.

Angner, E. (2010). Subjective Well–Being, *Journal of Socio–Economics*, 39:361–368.

Baumol, W.J. (1990). Entrepreneurship: Productive, Unproductive and Destructive, *The Journal of Political Economy*, 98(5), 893–921.

Becchetti, L. and Rossetti, F. (2009). When Money Does Not Buy Happiness: The Case of Frustrated Achievers, *The Journal of Socio–Economics*, 38, 159–167.

Benz, M. and Frey, B.S. (2004). Being Independent Raises Happiness at Work, *Swedish Economic Policy Review*, 11, 95–134.

Benz, M. and Frey, B.S. (2008). Being Independent is a Great Thing: Subjective Evaluations of Self–Employment and Hierarchy, *Economica*, 75, 362–383.

Blanchflower, D.G. (2004). Self-Employment: More May Not be Better, *NBER Working Paper no. 10286*. Cambridge MA: The National Bureau for Economic Research.

Blanchflower, D.G. and Oswald, A.J. (1998). What Makes an Entrepreneur?, *Journal of Labor Economics*, 16, 26–60.

Blanchflower, D.G. and Oswald, A.J. (2004).Well-Being Over Time in Britain and the USA, *Journal of Public Economics*, 88, 1359–1386.

Blanchflower, D.G. and Oswald, A.J. (2007). Hypertension and Happiness Across Nations, *IZA Discussion Paper no. 2633*. Bonn: IZA.

Block, J. and Koellinger, P. (2009). I Cant get No Satisfaction -Necessity Entrepreneurship and Procedural Utility, *Kyklos*, 62 (2), 191–209.

Bolle, F. and Kemp, S. (2008). Can We Compare Life Satisfaction Between Nationalities? Evaluating Actual and Imagined Situations, *Social Indicators Research*, 90 (3):397–408.

Bolle, F., Okhrin, Y. and Vogel, C. (2009). A Note on Interdependent Happiness, *The Journal of Socio–Economics*, 38, 713–721.

Bosma, N. & J. Levie (2010), *Global Entrepreneurship Monitor, 2009 Executive Report.* Babson Park, MA, US: Babson College, Santiago, Chile: Universidad del Desarrollo and Reykjavík, Iceland: Háskólinn Reykjavík University, London, UK: Global Entrepreneurship Research Association.

Bradley, D.E. and Roberts, J.A. (2004). Self-Employment and Job Satisfaction: Investigating the Role of Self–Efficacy, Depression, and Seniority, *Journal of Business Management*, 42(1), 37–58.

Carree, M., A. van Stel, R. Thurik, and S. Wennekers (2002). Economic Development and Business Ownership: An Analysis Using Data of 23 OECD Countries in the Period 1976–1996. *Small Business Economics*, 19(3), 271–290.

Casson, M. (1982). *The entrepreneur. An economic theory*. Oxford: Martin Robertson.

Ceja, L. (2009). Subjective Well-Being and Families in Business: A Study Using the Experience Sampling Method, Ph.D Thesis, IESE Business School: University of Navarra.

Clark, A. and Oswald, A.J. (1994). Unhappiness and Unemployment, *Economic Journal*, 104 (424), 648–659.

Clark, A.(2010). Work, Jobs, and Well–Being Across the Millennium. In Diener, E., Helliwell, J. and Kahneman,D. (Eds.) *International Differences in Well-Being*. Oxford: Oxford University Press, pp.436–464.

Cooper, A.C. and Artz, K.W. (1995). Determinants of Satisfaction for Entrepreneurs, *Journal of Business Venturing*, 10, 439–457.

Csíkszentmihályi, M. (1990). *Flow: The Psychology of Optimal Experience*. New York: Harper and Row.

Csíkszentmihályi, M. (2003). *Good Business: Leadership, Flow and the Making of Meaning*. Kent: Coronet.

Dean, J.W. (2007). National Welfare and Individual Happiness: Income Distribution and Beyond, *Journal of Policy Modeling*, 29, 567–575.

Di Tella, R. and MacCulloch, R. (2008). Gross National Happiness as an Answer to the Easterlin Paradox?, *Journal of Development Economics*, 86, 22–42.

Diener, E., Sandvik, E., Seidlitz, L. and Diener, M.(1993). The Relationship Between Income and Subjective Well–Being: Relative or Absolute?, *Social Indicators Research*, 28, 195–223.

Diener, E. and Biswas–Diener, R. (2002). Will Money Increase Subjective Well–Being? A Literature Review and Guide to Needed Research, *Social Indicators Research*, 57, 119–169.

Diener, E. and Biswas–Diener, R. (2008). *Happiness: Unlocking the Mysteries of Psychological Wealth*. Blackwell Publishing.

Diener, E., Ng, W., Harter, J. and Arora, R. (2010). Wealth and Happiness Across the World: Material Prosperity Predicts Life Evaluation, Whereas Psychosocial Prosperity Predicts Positive Feeling, *Journal of Personality and Social Psychology*, 99 (1), 52–61.

Easterlin, R.A. (1974). Does Economic Growth Improve the Human Lot? Some Empirical Evidence (*In* David, P.A. and Reder, M.W. eds. *Nations and Households in Economic Growth: Essays in Honor of Moses Abromowitz*. New York: Academic Press.)

Easterlin, R.A., (1995). Will Raising the Incomes of All Increase the Happiness of All? *Journal of Economic Behavior and Organization*, 27(1, June), 35–48.

Frey, B.S. and Stutzer, A. (2002). *Happiness and Economics*. Princeton: Princeton University Press.

Frey, B.S. and Stutzer, A. (2005). Happiness Research: State and Prospects, *Review of Social Economy*, 62(2), 207–228.

Fuchs–Schündeln, N. (2009). On Preferences for Being Self–Employed, *Journal of Economic Behavior and Organization*, 71(2), 162–171.

Goetz, M.C., Goetz, P.W. and Robinson, M.D. (2007). Whats the Use of Being Happy? Mood States, Useful Objects, and Repetition Priming Effects, *Emotion*, 7(3), 675–679.

Graham, C. (2005). The Economics of Happiness: Insights on Globalization from a Novel Approach, *World Economics*, 6(3), 41–55.

Graham, C., Eggers, A. and Sukhtankar, S. (2004). Does Happiness Pay? An Exploration Based on Panel Data from Russia, *Journal of Economic Behavior and Organization*, 55, 319–342.

Gries, T. and Naudé, W.A. (2010). Entrepreneurship and Structural Economic Transformation, *Small Business Economics Journal*, 34(1), 13–29.

Gries, T. and Naudé, W.A. (2011). Entrepreneurship and Human Development: A Capability Approach, *Journal of Public Economics*, 95 (3), 216–224.

Grinde, B. (2002). Happiness in the Perspective of Evolutionary Psychology, *Journal of Happiness Studies*, 3, 331–354.

Hayo, B. and Seifert, W. (2003). Subjective Economic Well–Being in Eastern Europe, *Journal of Economic Psychology*, 24 (3), 329–348.

Heckman, J. (1979). Sample selection bias as a specification error, *Econometrica, 47, 153–61.*

Hill, S.E. and Buss, D.M. (2008). Evolution and Subjective Wellbeing, In Eid, M. and Larsen, R.J. (Eds.) *The Science of Subjective Wellbeing*. New York: Guilford Press, pp. 62–79.

Howell, R.T. and Howell, C.J. (2008). The Relation of Economic Status to Subjective Well–Being in Developing Countries: A Meta–Analysis, *Psychological Bulletin*, 134(4),536–560.

Hupperty, A., Baylis, N. and Kevenne, B. (eds.) (2005).*The Science of Wellbeing*. Oxford: Oxford University Press.

Kahneman, D., Diener, E. and Schwarz, N. (eds) (1999). *Well-being: The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation.

Kaufmann, D., Kraay, A. and Mastruzzi, M. (2009). Governance Matters VIII: Aggregate and Individual Governance Indicators 1996–2008, *World Bank Policy Research, Working Paper* No. 4978, Washington, DC: World Bank

Konow, J. and Earley, J. (2008). The Hedonistic Paradox: Is Homo Economicus Happier?, *Journal of Public Economics*, 92, 1–33.

Lane, R.E. (2000). *The Loss of Happiness in Market Economies*. New Haven: Yale University Press.

Lange, T. (2012). Job Satisfaction and Self-Employment: Autonomy or Personality, *Small Business Economics*, 38(2), 165-177.

Layard, R. (2003). Happiness: Has Social Science a Clue? *Lionel Robbins Memorial Lectures 2002/3*, London School of Economics, 3–5 March 2003.

Layard, R. (2011). *Happiness: Lessons from a New Science*. London: Penguin Books.

Layard, R., Mayraz, G. and Nickell, S. (2008). The Marginal Utility of Income, *Journal of Public Economics*, 92, 1846–1857.

Lelkes, O. (2002). Tasting Freedom: Happiness, Religion and Economic Transition, *CASE paper 59*, Centre for Analysis of Social Exclusion, London School of Economics.

Lyubomirsky, S., King, L. and Diener, E. (2005). The Benefits of Frequent Positive Affect: Does Happiness Lead to Success?, *Psychological Bulletin*, 131(6), 803–855.

Minniti, M. and Naudé, W.A. (2010). What do We Know About the Patterns and Determinants of Female Entrepreneurship Across Countries? *The European Journal of Development Research*, 22 (3), 277–293.

Naudé, W.A. (2010). Entrepreneurship, Developing Countries and Development Economics: New Approaches and Insights, *Small Business Economics Journal*, 34 (1), 1–12.

Naudé, W.A. (2011). *Entrepreneurship and Economic Development*. Basingstoke: Palgrave Macmillan.

Mohanty, M.S. (2009). Effects of Positive Attitude on Happiness and Wage: Evidence from US Data, *Journal of Economic Psychology*, 30(6), 884–897.

Moskovitz, T.J., Vissing–Jørgensen, A. (2002). The returns to entrepreneurial investment: A private equity premium puzzle? *American Economic Review*, 92, 745–778.

Nyström, K. (2008). Is Entrepreneurship the Salvation for Enhanced Economic Growth? *CESIS Electronic Working Paper Series no. 143*. Royal Institute of Technology, Sweden.

Oswald, A.J., Proto, E. and Sgroi, D. (2009). Happiness and Productivity, *IZA Discussion Paper no. 4654*. Bonn: IZA.

Parker, S.C. and Ajayi-Obe, O. (2003). The Changing Nature of Work Among the Self–Employed in the 1990s: Evidence from Britain, *Journal of Labor Research*, 26(3), 501–517.

Patzelt, H. and Shepherd, D.A. (2011). Negative Emotions of an Entrepreneurial Career: Self-Employment and Regulatory Coping Behaviors, *Journal of Business Venturing*, 26(2): 226–238

Rehdanz, K. and Maddison, D. (2003). Climate and Happiness, *Working Paper FNU-20*.

Rogers, W. H. (1993). Regression standard errors in clustered samples, *Stata Technical Bulletin*, 13: 19–23 (available at http://www.stata.com/support/faqs/stat/stb13_rogers.pdf. Accessed on 03-02-2012).

Sacks, D.W., Stevenson, B. and Wolfers, J. (2010). Subjective Well–Being, Income, Economic Development and Growth, *Working Paper 16441*, National Bureau of Economic Research.

Sarracino, F. (2010). Determinants of Subjective well–Being in High and Low Income Countries: Do Happiness Equations Differ Across Countries?, *Working Paper no. 2010–15*, CEPS/INSTEAD, Luxembourg. July.

Seligman, M.E.P. (2002). *Authentic Happiness*. New York: Free Press.

Shane, S., and Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25, 217–226.

Stiglitz, J.E., Sen, A., and Fitoussi, J.P. (2009). Report by the Commission on the Measurement of Economic Performance and Social Progress. Available at http://www.stiglitz–sen–fitoussi.fr/en/index.htm

Stutzer, A. (2004). The Role of Income Aspirations in Individual Happiness, *Journal of Economic Behavior and Organization*, 54, 89–109.

Stutzer, A. and Frey, A. (2010). Recent Advances in the Economics of Individual Subjective Well–Being, *IZA Discussion Paper no 4850*. Bonn.

Taylor, M. (2004). Self–Employment in Britain: When, Who and Why?, *Swedish Economic Policy Review*, 12(2), 139–173.

van Boven, L. (2005). Experientialism, Materialism, and the Pursuit of Happiness, *Review of General Psychology*, 9 (2), 132–142.

van der Loos, M.J.H., Koellinger, P.D., Groenen, P.J.F. and Thurik, A.R. (2010). Genome-Wide Association Studies and the Genetic of Entrepreneurship, *European Journal of Epidemiology*, 25(1), 1–3.

van Stel, A., Carree, M. and Thurik, R. (2005). The effect of entrepreneurial activity on national economic growth. *Small Business Economics*, 24(3), 311–321.

Wennekers, S., van Stel, A., Thurik, R. and Reynolds, P. (2005). Nascent entrepreneurship and the level of economic development. *Small Business Economics,* 24(3), 293–309.

Wong, P., Ho, Y. and Autio, E. (2005). Entrepreneurship, innovation and economic growth: Evidence from GEM data. *Small Business Economics,* 24(3), 335–350.

World Values Survey 1981–2008 Official Aggregate v.20090901, (2009). *World Values Survey Association* Aggregate File Producer*:* ASEP/JDS, Madrid. Available at: http://www.worldvaluessurvey.org

Appendix:

Table A1: Life Satisfaction and Happiness Across Nations Included in the GEM Sample

Economy	Average Rate of Entrepreneurship	Average Rate of Opportunity Entrepreneurship	Average Rate of Necessity Entrepreneurship	Average Life Satisfaction	Happiness 2005
Angola	22.71	10.58	7.99	4.27	
Argentina	12.92	8.40	4.66	7.14	7.10
Australia	12.41	10.58	2.22	7.74	7.60
Austria	3.86	3.15	0.46	7.84	7.20
Belgium	3.19	2.92	0.35	7.37	7.40
Bolivia	29.82	20.95	8.59	6.50	
Bosnia and Herzegovina	9.02	4.95	3.85		
Brazil	13.21	7.11	5.64	7.57	7.60
Canada	8.54	7.06	1.46	7.97	7.30
Chile	13.22	8.85	4.05	6.29	6.30
China	13.13	6.73	6.60		6.70
Colombia	23.24	13.38	9.39	7.33	
Croatia	5.64	3.27	2.14		6.40
Czech Republic	7.85	5.45	2.40	6.57	
Denmark	5.78	5.30	0.33	8.38	8.10
Dominican Republic	18.55	12.79	5.59	7.59	
Ecuador	22.21	15.18	6.66	6.43	
Egypt	13.11	10.48	2.43	6.26	
Finland	5.88	5.48	0.59	7.94	8.00
France	4.49	3.24	1.07	6.52	7.10
Germany	5.17	3.75	1.37	7.03	7.20
Greece	7.09	5.23	1.38	6.53	6.50
Hong Kong	5.02	3.52	1.27		
Hungary	6.31	4.35	1.78	5.49	5.70
Iceland	11.51	9.72	0.75	8.15	8.30
India	10.98	7.29	3.89	5.51	
Indonesia	19.28	16.67	2.62	5.67	
Iran	9.18	5.91	2.86	5.63	
Ireland	7.25	7.08	1.28	7.77	7.60
Israel	5.95	3.75	1.13	7.05	
Italy	5.47	3.77	0.72	6.86	6.90
Jamaica	17.65	10.29	6.63		6.70
Japan	3.03	2.21	0.84	6.75	6.80
Jordan	18.26	14.53	2.56	5.85	
Kazakhstan	9.36	6.57	2.60	6.13	
Korea	13.26	7.45	4.62		
Latvia	6.05	4.75	1.04	5.43	5.40
Macedonia	14.47	7.15	6.84		
Malaysia	11.09	10.12	0.53	6.60	
Mexico	11.46	7.73	2.69	7.72	7.70
Netherlands	4.98	4.23	0.46	7.68	7.70
New Zealand	15.10	13.27	2.00		7.70
Norway	8.19	7.10	0.47	7.82	7.70
Peru	32.99	22.78	9.97	5.90	
Philippines	20.44	11.11	9.32	5.47	
Poland	7.30	4.36	2.75	6.32	
Portugal	6.61	5.31	1.08	5.74	
Puerto Rico	3.06	2.41	0.45		
Romania	4.00	2.40	0.97	5.87	
Russia	4.09	2.94	0.87		
Serbia	8.08	4.36	3.24		
Singapore	5.13	4.83	0.92	6.92	7.10
Slovenia	4.44	3.61	0.76	6.82	7.00
South Africa	6.26	3.92	2.05	5.69	5.00
Spain	5.84	4.67	1.32	7.22	7.60
Sweden	4.13	3.49	0.58	7.85	7.90
Switzerland	6.75	5.65	0.90	8.04	8.10
Taiwan	4.27	3.33	0.71		
Thailand	20.43	14.33	5.22	6.25	6.30
Turkey	5.87	3.36	2.02	5.07	
Uganda	30.45	16.79	13.79	4.48	
United Arab Emirates	6.09	4.83	0.81		
United Kingdom	5.94	4.73	0.85	7.14	
United States	11.48	9.18	1.39	7.90	7.90
Uruguay	12.22	7.85	3.74	6.75	
Venezuela	24.15	14.98	9.16		6.90

Figure 1: Relationship between Happiness and the Global Entrepreneurship Index

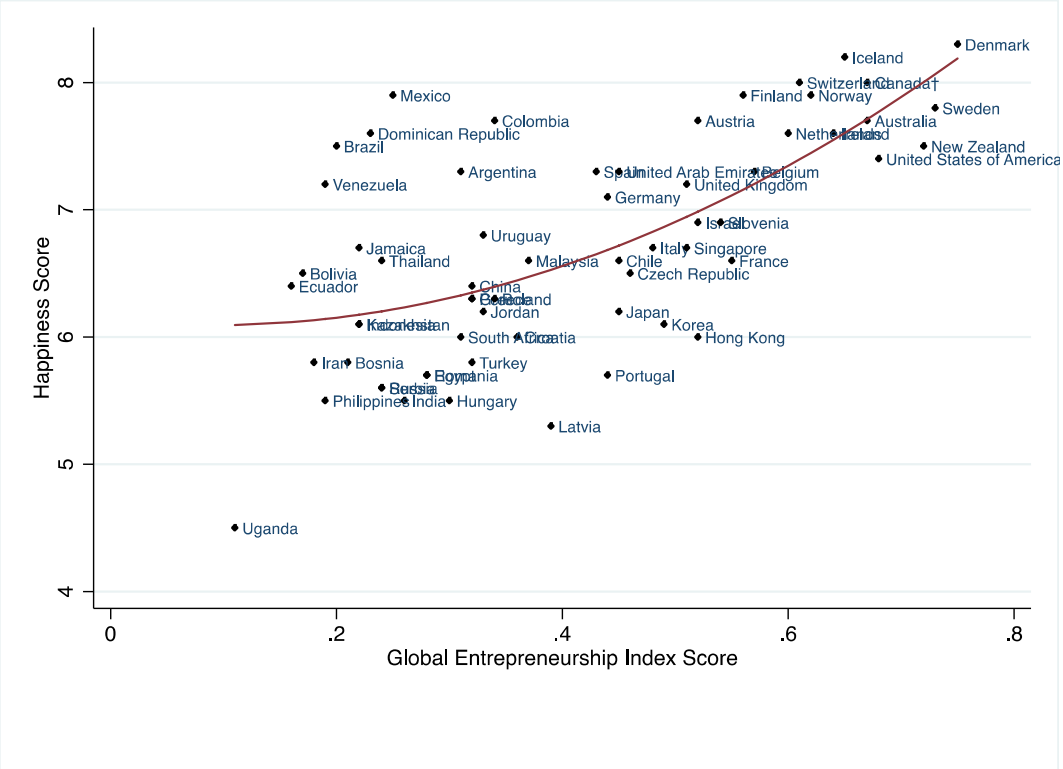

Figure 2: Business Ownership Rates and the Job Satisfaction of Entrepreneurs in Selected European Countries

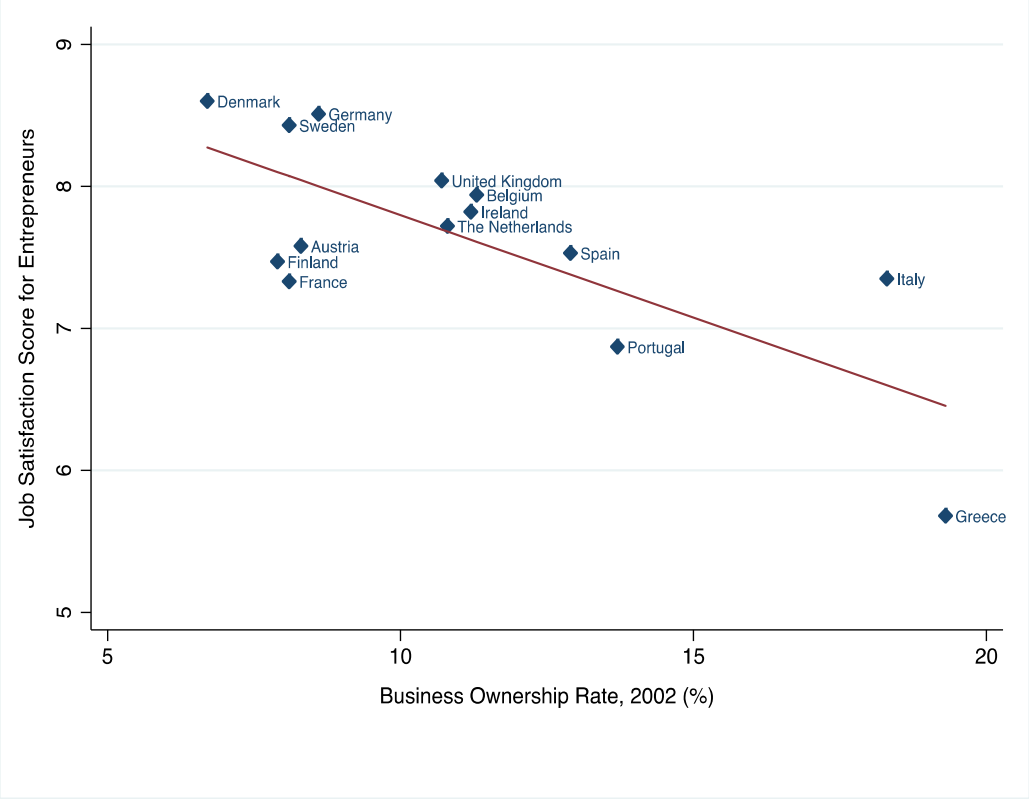

Table 1: Variables and Sources of Data: Country Level Data

Variable	Description	Source
Ratio between OPP and NEC	Opportunity-driven entrepreneurship (OPP)/Necessity-driven entrepreneurship (NEC)	1
GDP per capita	Gross Domestic Product per capita PPP $ 2008	2
Total economic freedom	Index of Economic Freedom	3
Income Gini	Gini coefficient for income distribution	4, 5
Income aspiration	GDP Per capita PPP $ in 2008 multiplied by Income Gini	
Life satisfaction	The national level of life satisfaction score	6
Life index	Component of Human Development Index-Life expectancy rate at birth	7
Education index	Component of Human Development Index-Adult literacy rate (% age 15 and above)	7
Rule of Law	Perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence (Kaufmann et al., 2009: 6).	8

Sources: (1) GEM Survey 2005, (2) IMF Economic outlook Database, (3) Index of Economic Freedom of The Wall Street Journal and The Heritage Foundation. (4) UNU-WIDER Databases (5) Source-OECD (6) World Database on Happiness (7) Human Development Report-UNDP (8) World Bank Worldwide Governance Indicators.

Table 2: Variables and Sources of Data: Individual Level Data

Variable	Description	Source
Dependent		
Early stage entrepreneurial activity	Adult individual (18-64) who is starting a new business or currently a owner-manager of a new business, that has paid salaries, wages, or any other payments to the owners not more than 42 months	1
Opportunity driven entrepreneurs	Individual involved in early-stage entrepreneurial activity (as defined above) who claim to be driven by opportunity as opposed to finding no other option for work; and indicate the main driver for being involved in this opportunity is being independent or increasing their income, rather than just maintaining their income	1
High-growth expectations	Individual involved in early-stage entrepreneurial (as defined above) *and* expect to employ at least 20 employees five years from now	1
Individual Capabilities		
Age	Age	1
Education	A dummy = 1 if the entrepreneur has a graduate qualification and = 0 if otherwise	1
Entrepreneurial skills (confidence)	Adult individual (18-64) who believe to have the required skills and knowledge to start a business	1
Opportunity perception	Adult individual (18-64) who see good opportunities to start a firm in the area where they live	
Gender	Male = 1 and female = 2	1
Fear of Failure	Adult individual (18-64) who indicate that fear of failure would prevent them from setting up a business	1
	Industry-level determinants	
Networks	Number of actual owners and number of other entrepreneurs that knows	1
Availability of credit	The amount of credit extended to the private sector	4
	Institutional determinants	
Cost of starting a business	The cost to start a business as % of GNI	3
Cultural orientation	Adult individual (18-64) who agree with the statement that in their country, most people consider starting a business as a desirable career choice	1
Gross domestic product	GDP in constant terms	4
Happiness measure		
Life Satisfaction score	The national level life satisfaction score	2

Sources: (1) GEM Survey 2005, (2) The Gallup World Poll, (3) World Bank Doing Business Indicators 2005, (4) World Bank World Development Indicators.

Table 3: Summary of Variables Used in the Pooled 3SLS Estimation

Variable	Observations	Mean	Standar deviation	Max	Min
Life index	104	0.88	0.05	0.96	0.64
Education Index	104	0.96	0.04	0.99	0.64
Early stage entrepreneurial activity (TEA)	104	6.66	4.12	26.87	1.63
Opportunity driven entrepreneurship (OPP)	104	4.99	2.74	17.88	1.13
Gross Domestic Product per capita PPP ($US year 2008)	104	26919.08	9378.79	53152.39	2563.34
Economic Freedom	104	68.57	6.74	80.93	54.08
Income aspiration	104	798877.20	270126.90	1865594.00	94330.91
TEA x (OPP/NEC)	104	39.45	40.29	238.78	5.12
Life Satisfaction	104	7.08	0.77	8.48	5.31
Rule of Law	104	1.29	0.67	2.02	-0.71

Table 4: Correlation of Variables Used in the Pooled 3SLS Estimation

	Life index	Education Index	Early stage entrepreneurial activity (TEA)	Opportunity driven entrepreneurship (OPP)	Gross Domestic Product per capita PPP ($US year 2008)	Economic Freedom	Income aspiration	TEA x (OPP/NEC)	Life Satisfaction	Rule of Law
Life index	1									
Education Index	0.7134	1								
Early stage entrepreneurial activity (TEA)	-0.4251	-0.4027	1							
Opportunity driven entrepreneurship (OPP)	-0.3161	-0.2884	0.9646	1						
Gross Domestic Product per capita PPP ($US year 2008)	0.7887	0.6044	-0.3968	-0.2459	1					
Economic Freedom	0.4674	0.4406	-0.1534	-0.0256	0.5636	1				
Income aspiration	0.7131	0.4712	-0.1864	-0.0565	0.874	0.5459	1			
TEA x (OPP/NEC)	0.1513	0.1979	0.2471	0.4315	0.4184	0.2019	0.3884	1		
Life Satisfaction	0.5348	0.4394	-0.0525	0.0660	0.6451	0.5769	0.5385	0.4567	1	
Rule of Law	0.6916	0.6098	-0.5366	-0.3874	0.8134	0.7293	0.5679	0.2752	0.6004	1

Table 5: 3SLS models results

	Model 1		Model 2	
Variable	**Life Satisfaction**	**TEA**	**Life Satisfaction**	**OPP**
Outcome equation:				
Constant	3.21 **	-11.97 ***	1.41	-3.43
	(1.5)	(4.14)	-1.7	(2.73)
TEA	0.149 ***			
	(0.05)			
TEA^2	-0.001			
	(0.002)			
OPP			0.657 ***	
			(0.107)	
OPP^2			-0.017***	
			(0.005)	
TEAx(opp/nec)	0.006 ***			
	(0.001)			
GDP per capita	0.0002 ***	-0.001***	2.92E-04***	-0.007***
	(5.0E-05)	(1.84E-04)	(5.89E-05)	(1.31E-04)
Squared GDP per capita	-1.99E-09 ***	1.14E-08 ***	-3.14E-09***	8.18E-09***
	(5.97E-10)	(2.26E-09)	(7.72E-10)	(1.66E-09)
Education index	-0.441		-1.059	
	(1.439)		(1.529)	
Life index	0.521		0,513	
	(1.916)		(2.006)	
Income aspiration	-8.88E-07 *	4.52E-06*	-2.42E-06***	4.06E-06**
	(4.90E-07)	(2.76E-06)	(6.89E-07)	-1.92E-06
Life Satisfaction		4.12***		2.212***
		(0.465)		(0.274)
Total economic freedom index		0.093		0.034
		(0.064)		(0,038)
Rule of Law	0.31541*	-2.695**	0.095	-0.665
	(0.169)	(1.133)	(0.228)	(0.775)
Number of observations	104	104	104	104
Chi^2	134.9***	211.28***	106.35***	135.77***

Standard deviations in brackets. ***Significance at the 1 % ; ** 5%; * 10%.

Table 6: Double Probit Estimation Results: The Effect of National Happiness on Early Stage Entrepreneurial Activity

Variable		
Outcome equation:	**High-growth expectations**	**High-growth expectations**
Constant	1.29 (1.54)	2.08 (1.91)***
Age	-0.00 (-0.09)	0.00 (0.37)
Gender	-0.18 (-1.46)	-0.25 (-4.01)*
Education	0.11 (0.88)	0.13 (1.29)
Fear of failure	-0.02 (-0.15)	-0.02 (-0. 16)
Entrepreneurial confidence	-0.40 (-1.82)***	-0.35 (-1.82)***
Number of owners/partners	0.12 (2.13)***	0.15 (4.76)*
Cultural support	-0.05 (-0.62)	-0.02 (-0.29)
GDP	0.00 (0.37)	0.00 (0.564)
Happiness score in 2005	-0.11 (-1.05)	**-0.25** (-2.19)***
Selection equation:	**Total early stage entrepreneurial activity (TEA)**	**Opportunity-driven TEA**
Constant	-0.22 (-0.31)	-1.17 -1.74)
Start-up costs	-0.01 (-1.11)	-0.00 (-0.18)
Age	-0.00 (-2.48)***	-0.01 (-3.62)*
Gender	-0.02 (-0.84)	-0.01 (-0.38)
Fear of failure	-0.19 (-3.57)*	-0.24 (-3.94)*
Entrepreneurial confidence	0.56 (8.13)*	0.58 (9.36)*
Opportunity perception	0.15 (1.80)***	0.17 (2.77)**
Know entrepreneurs (network)	0.18 (4.25)*	0.22 (4.66)*
Education	0.09 (2.89)**	0.18 (5.61)*
Availability of credit	0.01 (0.93)	0.00 (1.67)***
Cultural support	0.09 (2.00)***	0.05 (1.43)
GDP	0.00 (0.71)	0.00 (0.46)
Happiness score in 2005	-0.15 (-1.33)*	-0.07 (-0.70)
Diagnostics		
Number of Observations	12,228	12,235
Censored Observations	9,628	10,288
Uncensored Observations	2,600	1,1947
ρ	-0.79	-0.75
LR test (ρ=0)	2.01	4.08***

Z-ratios in brackets. Significance at the *** 1 % ; ** 5%; * 10%.

The UNU-MERIT WORKING Paper Series

2012-01 *Maastricht reflections on innovation* by Luc Soete
2012-02 *A methodological survey of dynamic microsimulation models* by Jinjing Li and Cathal O'Donoghue
2012-03 *Evaluating binary alignment methods in microsimulation models* by Jinjing Li and Cathal O'Donoghue
2012-04 *Estimates of the value of patent rights in China* by Can Huang
2012-05 *The impact of malnutrition and post traumatic stress disorder on the performance of working memory in children* by Elise de Neubourg and Chris de Neubourg
2012-06 *Cross-national trends in permanent earnings inequality and earnings instability in Europe 1994-*2001 by Denisa Maria Sologon and Cathal O'Donoghue
2012-07 *Foreign aid transaction costs* by Frieda Vandeninden
2012-08 *A simulation of social pensions in Europe* by Frieda Vandeninden
2012-09 *The informal ICT sector and innovation processes in Senegal* by Almamy Konté and Mariama Ndong
2012-10 *The monkey on your back?! Hierarchical positions and their influence on participants' behaviour within communities of learning* by Martin Rehm, Wim Gijselaers and Mien Segers
2012-11 *Do Ak models really lack transitional dynamics?* by Yoseph Yilma Getachew
2012-12 *The co-evolution of organizational performance and emotional contagion* by R. Cowan, N. Jonard, and R.Weehuizen
2012-13 *"Surfeiting, the appetite may sicken": Entrepreneurship and the happiness of nations* by Wim Naudé, José Ernesto Amorós and Oscar Cristi